Provider Experience of Uterine Balloon Tamponade for the Management of Postpartum Hemorrhage in Sierra Leone

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Scholarly Report submitted in partial fulfillment of the MD Degree at Harvard Medical School

Date: 6 October 2016

Student Name: Anne Marie Williams, BA

Scholarly Report Title: Provider Experience of Uterine Balloon Tamponade for the Management of Postpartum Hemorrhage in Sierra Leone.

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Abstract:

TITLE: Provider Experience of Uterine Balloon Tamponade for the Management of Postpartum Hemorrhage in Sierra Leone.


Objective: To understand healthcare providers’ experience of incorporating uterine balloon tamponade (UBT) into the national postpartum hemorrhage (PPH) clinical pathway after UBT training.

Methods: In a qualitative study, semi-structured interviews were undertaken with healthcare providers from 50 centers in Freetown, Sierra Leone, between May and June 2014. All eligible healthcare providers (undergone UBT training, actively conducted deliveries, and treated cases of PPH since UBT training) on duty at the time of center visit were interviewed.

Results: Sixty-one providers at 47 facilities were interviewed. Bleeding was controlled in 28 (93%) of 30 cases of UBT device placement. Participants reported that UBT devices were easy to insert with only minor challenges, and enabled providers to manage most cases of uncontrolled PPH at their own facility and to refer others in a stable condition. Reported barriers to optimal UBT use included insufficient training and practical experience, and a scarcity of preassembled UBT devices. Facilitators of UBT use included widespread acceptance of UBT, comprehensive and enthusiastic training, and ready availability of UBT devices.

Conclusion: UBT—used either as a primary endpoint or en route to obtaining advanced care—has been well accepted and integrated into the national PPH pathway by providers in health facilities in Freetown.
Student Role in the Project:

Case follow-up and active surveillance of uses of the uterine balloon (UBT) began after initial trainings, 5 months prior to my arrival in Sierra Leone. During my time in Sierra Leone in the summer of 2014, I continued UBT case follow-up and performed active field surveillance to find unreported UBT cases. I conducted in-depth follow-up interviews with providers involved in these cases using the established interview questionnaire. I also familiarized myself with the country setting, the Sierra Leonean health care system, the UBT training protocol and how this training was being performed and this protocol was being implemented in-country. This context was critical for the subsequent analysis of all the interviews in the data set.

Upon return from Sierra Leone, I was one of two primary researchers reviewing all data for this project. The other researcher was the primary author of this paper. I coded over 60 interviews, including interviews I performed and transcribed, as well as interviewers performed by my research partner while we were in country, and interviews collected prior to my arrival. The primary researcher and I proceeded with analysis, both individually coding all interviews and then establishing a single codebook where all of our codes were in agreement. Review by multiple independent reviewers of our data was an essential part of our qualitative analysis and strengthened the validity of our analysis.

I then participated in the thematic analysis using these codes, and developed an outline and manuscript draft in collaboration with the primary researcher. This manuscript was reviewed by our project mentor, and was accepted and published. Citation follows:


http://www.ijgo.org/article/S0020-7292(16)30038-8/fulltext

Please note: the five authors that precede me on this manuscript include the primary researcher, the primary in-country liaison, the research director of the Division of Global Health
and Human Rights, and two physician investigators in the Division who designed the uterine balloon and training protocol that this project was evaluating.

**Contributions of the project to the field:**

UBT is an accepted intervention for PPH in well-resourced countries. Well-resourced countries can also use multiple uterotonics, arterial embolization or surgical intervention to manage uncontrolled PPH. However, in low-resource settings interventions are limited to uterine massage, manual uterine evacuation and perhaps uterotonics, with little recourse if bleeding remains uncontrolled.

Existing uterine balloons cost up to $400 per device. However, MGH has developed a UBT implementation package that includes an ultra-low-cost uterine balloon made of a condom tied to a urinary catheter and inflated with clean water through a one-way valve, along with pictorial instructions. The MGH team has studied the use of their UBT package in multiple low-resources settings, starting with South Sudan and Kenya in 2010, and has documented successful use by low-literacy frontline health workers (FHWs) in seventeen separate manuscripts, indicating its utility and efficacy in such settings.

In partnership with the Ministry of Health and Sanitation in Sierra Leone, the MGH team introduced their UBT package in 104 health facilities across four informal settlements in Freetown. The project involved training health providers, collecting case data on UBT use, and receiving feedback on the training module and UBT package from health sector stakeholders, including providers. With this information, the project addresses any existing challenges and use knowledge gained for future implementation projects.

While saving the life of a woman in childbirth has value in itself, healthy mothers are additionally important for the well-being of their children, and thus for the stability of society. Mothers who die in childbirth leave behind children who are less likely to live to adolescence. These women, so important to social stability, are threatened more than other groups during and after conflict. As such, keeping women alive and healthy to care for their children is an
important priority with far-reaching effects in a post-conflict setting. In Sierra Leone, a post-conflict country with a very young population, this priority is particularly important. Maternal mortality is the 4th highest in the world, and PPH is the leading cause of this mortality. It is thus crucial for continued recovery and increased resilience of this nation to address this leading threat to maternal health and wellbeing.

This project studied the barriers to implementation of this intervention. Implementation science, or the “scientific study of methods to promote the systematic uptake of proven clinical treatments... into routine practice,” has been gaining increased recognition as a crucial aspect of health innovation, particularly in the field of global health. A careful study of barriers to implementation, particularly taking into account the “behaviour of healthcare professionals...as key sources of variance,” is thus a crucial aspect of this at-scale implementation project with aspirations for widespread relevance. The validation of this low-cost device, and the information about optimal implementation can make the case for widespread uptake of the device by ministries of health, and facilitate effective scale-up and roll-out.

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